



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,528	07/17/2003	Jagdip N. Thaker	03122	2483
<div>7590 11/20/2007 FUZAIL & ASSOCIATES 2413 BALDWIN COURT SCHAMBRG, IL 60193</div>			<div>EXAMINER DOTE, JANIS L</div>	
			<div>ART UNIT 1795</div>	<div>PAPER NUMBER</div>
			<div>MAIL DATE 11/20/2007</div>	<div>DELIVERY MODE PAPER</div>

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/621,528

Applicant(s)

THAKER, JAGDIP N.

Examiner

Janis L. Dote

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. The examiner acknowledges the cancellation of claim 20 and the amendment to claim 18 filed on Apr. 26, 2007. Claims 18 and 19 are pending.

The "Amendment to the specification" section filed on Sep. 5, 2007, has been entered.

2. The "Amendment to the claims" section and the "Amendment to the specification" section filed on Jan. 9, 2007, did not comply with 37 CFR 1.121 for the reasons discussed in the Notice of Non-compliant amendment mailed on Mar. 27, 2007. Accordingly, those sections have not been entered.

3. The "Amendment to the specification" section filed on Apr. 26, 2007, did not comply with 37 CFR 1.121 for the reasons discussed in the Notice of Non-compliant amendment mailed on Jul. 5, 2007. Accordingly, that "Amendment to the specification" section has not been entered.

4. The objection to the specification set forth in the office action mailed on Aug. 17, 2006, paragraph 4, has been withdrawn in response to the replacement paragraph at page 8 and the

replacement tables at pages 11-14 of the specification filed on Sep. 5, 2007.

The objection to claim 18 set forth in the office action mailed on Aug. 17, 2006, paragraph 7, has been withdrawn in response to the amendment to claim 18 filed on Apr. 26, 2007.

5. The examiner notes that the instant specification at page 9, lines 1-2, defines the term "wax" recited in the instant claims as "referring to any wax with melting point less than 70°C, and is used to provide anti-offset characteristics."

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,145,762 (Grushkin) combined US 5,741,617 (Inaba) and US 5,797,070 (Waki).

Grushkin discloses toner particles that are obtained by the method comprising the following steps: (1) powder blending a hydrophilic cubic magnetite associated with the tradename MAPICO BLACK, a styrene-n-butylacrylate copolymer, as the toner binder resin, a charge enhancing ingredient, i.e., a charge control

agent, and a wax, such as a polypropylene wax; (2) feeding the blended mixture of step (1) to an extruder; (3) injecting water and triisostearoyl titanate, a titanate coupling agent, into the extruder during the melt-mixing of the blended mixture of step (1) in the extruder; (4) removing the water and other volatiles from the melt-mixed mixture through a vacuum; (5) cooling the resultant melt-kneaded mixture; (6) pulverizing the cooled mixture of step (5) to obtain toner particles having a volume median diameter of from 8 to 12 microns; (7) classifying the toner particles of step (6) to remove fine particles having a volume median diameter of below 4 microns and those particles having a volume median diameter of more than 20 microns; and (8) blending hydrophobic silica to the toner particles of step (7). Col. 6, lines 5-30; and example 1 at col. 12, line 33, to col. 13, line 4. The resultant toner particles were tested in the XEROX Corporation 1012 imaging apparatus, i.e., a "photocopier." Col. 13, lines 4-5. The magnetite associated with the tradename MAPICO BLACK meets the pigment limitation recited in instant claim 18. The styrene-n-butylate copolymer meets the polymerized co-monomers compositional limitation recited in instant claim 18. The volume median diameter of 8 to 12 microns meets the particle

size range of "about 3 to about 20 microns" recited in instant claim 18. According to Grushkin, the titanate coupling agent and the hydrophilic magnetite are reacted during the melt mixing of the toner components. Col. 5, line 66, to col. 6, line 2. Thus, the resultant magnetite-titanate coupling agent reaction product meets the limitation of treating the pigment with a coupling agent recited in instant claim 18. Furthermore, because the titanate coupling agent treats the magnetite associated with the tradename MAPICO BLACK during the melt mixing of the toner components, including the charge control agent and the wax, it is reasonable to presume that the titanate coupling agent also treats the charge control agent and the wax, thereby meeting the limitation of treating the charge control agent and wax with a coupling agent as recited in instant claim 18. The burden is on applicant to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Grushkin does not explicitly state that the wax is "micronized" as recited in instant claim 18. However, as discussed above, the wax is powder blended with the other toner components and internally incorporated in the toner particles, and the resultant toner particles have a volume median diameter of 8 to 12 microns. Thus, because the micron-sized toner

particles contain the wax, it is reasonable to presume that the wax is smaller than the 8 to 12 microns volume median diameter of the toner particles, i.e., that the wax is "micronized." The burden is on applicants to prove otherwise. Fitzgerald, supra.

Grushkin does not exemplify toner particles comprising a wax as defined in the instant specification. See paragraph 5, supra. However, Grushkin does not limit the type of wax used in its toner particles. See reference claim 1, which recites melt-blending toner resin particles and "wax." Grushkin teaches that the wax can be a low molecular weight wax. Col. 9, lines 56-57.

Inaba discloses wax composition No. 1, which comprises aliphatic ester waxes 1, 5, and 10, and has a melting point of 60°C. The wax composition No. 1 has a weight average molecular weight Mw of 1,400 and a number average molecular weight Mn of 660. See Wax composition No. 1 at col. 22 and Table 1. The wax melting point of 60°C meets the melting point range of less than 70°C of the instant specification's wax definition. See paragraph 5, supra. According to Inaba, toners comprising said wax composition have superior low-temperature fixing and anti-offset properties, and form OHP film images of high quality. Col. 3, lines 56-59 and 65-67. Inaba further

discloses that images formed from said toners can be fixed without the application of oil. Col. 3, lines 60-63. Inaba teaches that said toners can be obtained by a melt-kneading-pulverization method. Col. 14, lines 49-60.

It would have been obvious for a person having ordinary skill in the art to use Inaba's wax composition No. 1 as the wax component in the toner particles disclosed by Grushkin. That person would have had a reasonable expectation of successfully obtaining a toner having the benefits disclosed by Inaba.

Grushkin does not explicitly disclose that its toner particles have a "spherical" shape as recited in instant claim 18. However, the benefits of obtaining spherical toner particles are well known in the toner art. For example, Waki discloses that it is advantageous for spherical toners to have a shape factor SF-1 of 100 to 180, preferably from 100 to 140. Col. 8, lines 8-27. Waki discloses that the shape factor SF-1 represents the degree of sphericity of the toner, and a shape factor SF-1 closer to 100 means that the shape of the toner particles is closer to a sphere. Col. 8, lines 29-32. Waki discloses that said spherical toner particles can be produced by heating a pulverized toner prepared by melting, blending, pulverization, and classification; or by the application of

impact to the toner particle surface of a pulverized toner. Waki, col. 8, lines 50-56; and col. 13, lines 34-39. As discussed supra, Grushkin obtains its toner particles by a melt-kneading-pulverization method. According to Waki, a spherical toner is "electrified uniformly at the surface because of its spherical or nearly spherical shape," and has a weaker adhesion to the surface of the photosensitive member to cause less "separation discharge" and "toner re-transfer." Col. 7, lines 42-44, and col. 7, line 62, to col. 8, line 3. Waki further teaches that if the SF-1 value is 180 or higher or the SF-2 value is 140 or higher, the "toner re-transfer is possibly not prevented, the transfer efficiency may be lower, fogging may be remarkable, or durability may be lower." Col. 8, lines 35-38. Accordingly, the prior art appears to recognize that the SF-1 and SF-2 values are result-effective variables. The variation of result-effective variables is presumably within the skill of the ordinary worker in the art.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Waki, to further process the toner particles rendered obvious over the combined teachings of Grushkin and Inaba, such that the resultant toner particles are spherical having a SF-1 value and a SF-2 value as

taught by Waki, and to use the resultant spherical toner particles in the toner disclosed by Grushkin. That person would have had a reasonable expectation of successfully obtaining a spherical toner that has improved transfer efficiency and provides improved toner images with less fogging.

Instant claims 18 and 19 are written in product-by-process format. Grushkin does not disclose that its toner particles are obtained by the polymerization method recited in instant claim 18. However, as discussed supra, the toner particles rendered obvious over the combined teachings of Grushkin, Inaba, and Waki meet the compositional limitations, particle size limitations, and spherical shape limitation recited in instant claim 18. Thus, it appears that the toner particles rendered obvious over the combined teachings of the cited prior art are the same or substantially the same as the microsphere particles made by the process limitations recited in instant claim 18. The burden is on applicant to prove otherwise. In re Marosi, 218 USPQ 289 (Fed. Cir. 1983) and In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985). MPEP 2113.

Grushkin does not explicitly disclose that its toner is used in a "laser printer" as recited in instant claim 19. However, the recitation "for use in a laser printer" is merely a

recitation of intended use that does not distinguish the toner recited in the instant claims from the toner rendered obvious over the combined teachings of Grushkin, Inaba, and Waki. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

8. Applicant's arguments filed on Jan. 9, 2007, as applicable to the rejection over Grushkin set forth in paragraph 7 above have been fully considered but they are not persuasive.

Applicant asserts that none of the references taken alone or in combination discloses all of the limitations recited in instant claim 18. In particular, applicant asserts that none of the references discusses "the use of 'monomers,' but rather discloses copolymers"; that Grushkin does not disclose that its toner particles are obtained by the polymerization method recited in instant claim 18; and that the toner "particle size achieved in Grushkin is because of a step involving pulverizing. In the present case, the particle size is achieved during the process which is substantially different that what is disclosed

in any of the three references." Applicant asserts that "one skilled in the art would not be [sic: have been] motivated to combine the references but for hindsight presented after reading the present patent application."

Applicant's assertions are not persuasive for the following reasons:

First, instant claim 18 recites that the co-monomers are polymerized to form "polymerized microsphere particles" in step (g) and that any residual co-monomers are removed in step (h). In other words, the microsphere particles claimed in claim 18 are "polymerized microsphere particles" which comprise polymerized co-monomers, i.e., a copolymer. Thus, as discussed in the rejection in paragraph 7 above, the Grushkin toner particles comprise a styrene-n-butylacrylate copolymer as the toner binder resin. Because the microsphere particles in claim 18 comprise polymerized co-monomers, i.e., a copolymer, and the Grushkin styrene-n-butylacrylate copolymer binder resin is a copolymer, the Grushkin styrene-n-butylacrylate copolymer meets the polymerized co-monomers compositional limitation recited in instant claim 18.

Second, instant claims 18 and 19 are not drawn to a process of making a microsphere particle or a color toner, respectively.

Rather, claims 18 and 19 are drawn to products, namely a microsphere particle and a color toner, respectively. As discussed in the rejection in paragraph 7 above, instant claims 18 and 19 are written in product-by-process format.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of the product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from the product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See MPEP 2113, quoting In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Feb. Cir. 1985).

For the reasons discussed above and in the rejection in paragraph 7 above, because the toner particles rendered obvious over the combined teachings of the cited prior art meet the compositional limitations, the particle size limitations, and the spherical shape limitations recited in instant claim 18, those toner particles appear to be the same or substantially the same as the microsphere particles and toner particles made by the process limitations recited in instant claims 18 and 19.

Applicant has not provided any objective evidence showing differences unobvious, or not, between the claimed product made by the process limitations recited in instant claims 18 and 19 and the toner particles rendered obvious over the combined teachings of the cited prior art.

Third, in response to applicant's assertion that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

As discussed in the rejection in paragraph 7 above, the prior art provides reason, suggestion, and motivation to a person having ordinary skill in the art to use the Inaba wax having a melting point of 60°C as the wax in the Grushkin toner particles, and to further process the toner particles rendered obvious over the combined teachings of Grushkin and Inaba such

that the resultant toner particles are spherical in shape as taught by Waki.

Accordingly, for the reasons discussed above and in the rejection in paragraph 7 above, the combined teachings of Grushkin, Inaba, and Waki render obvious the microsphere particles and toner particles recited in instant claims 18 and 19, respectively. Therefore, the rejection of claims 18 and 19 stand.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control
Number: 10/621,528
Art Unit: 1795

Page 15

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Janis L. Dote
JANIS L. DOTE
PRIMARY EXAMINER
GROUP 1500
1700

JLD
Nov. 16, 2007